METHODIST GIRLS' SCHOOL

Founded in 1887

MID-YEAR EXAMINATION 2019
PRIMARY 4
SCIENCE

BOOKLET A

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES
Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____( )

Class: Primary 4._____

Date : 14 May 2019

This booklet consists of 20 printed pages including this page.

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS).

[56 marks]

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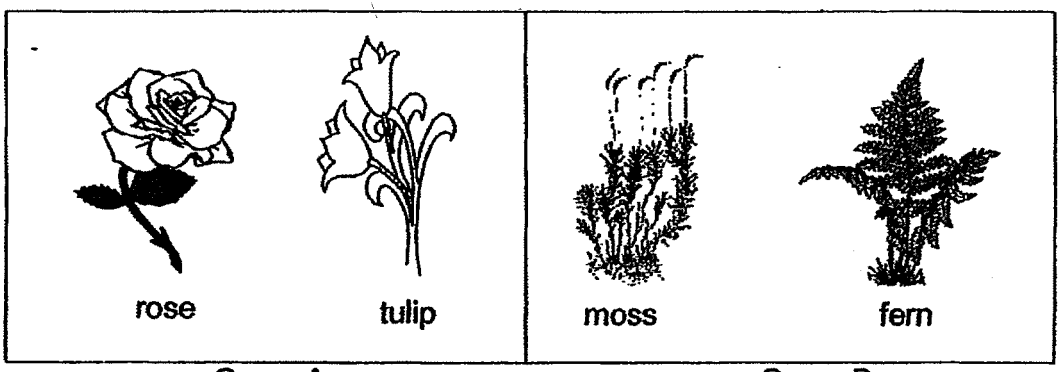
1 The table below shows the classification of some living things into groups X, Y and Z.

X	Y	Z
Mould	cheetah	ant
Toadstool	whale	mosquito
bread mould	bat	dragonfly
bracket fungus	dolphin	housefly

Which of the following correctly describes the animals grouped in X, Y and Z?

	X	Y	Z
(1)	useful to human	give birth to young alive	have three body parts
(2)	do not have chlorophyll	lay eggs	have wings
(3)	make their own food	live in water	have six legs
(4)	reproduce by spores	give birth to young alive	lay eggs

2 The plants below are classified into Group A and Group B.



Which one of the following statements correctly describes the similarity between the plants in Group A and Group B?

(1) They bear flowers.
(2) They reproduce by spores.
(3) They can make their own food.
(4) They can move from one place to another place.

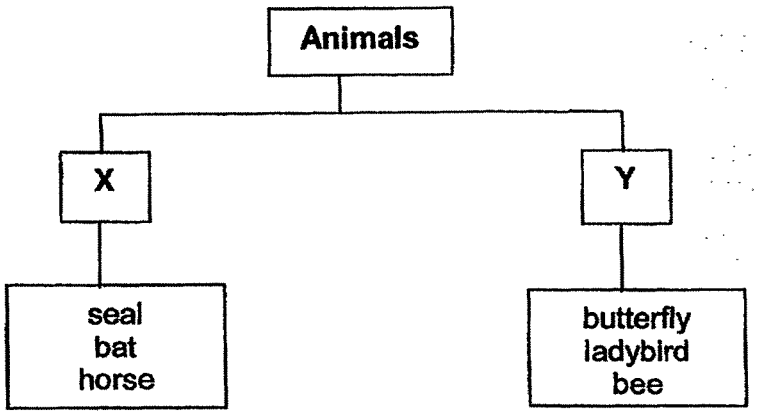
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3 Which of the following are micro-organisms?

A Yeast
B Moss
C Bacteria
D Bracket fungus

(1) A and B only
(2) A and C only
(3) B and C only
(4) B and D only

4 Study the following classification diagram.



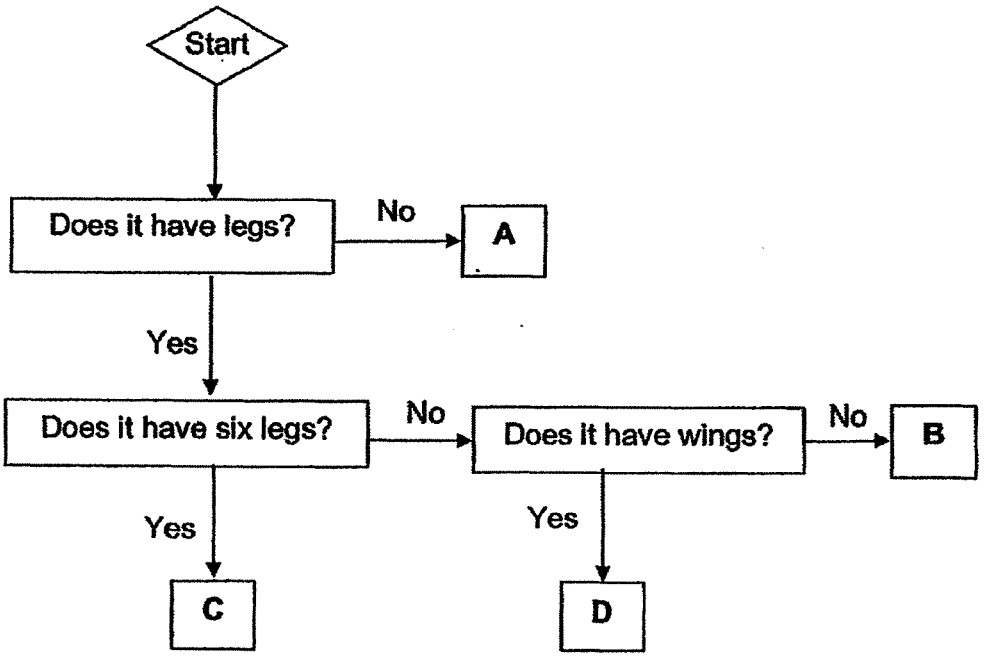
Which one of the following sets of headings is suitable for X and Y?

	X	Y
A	Have four legs	Have six legs
B	Give birth to young alive	Lay eggs
C	Live in water	Live on land
D	Have hair	Have hard outer covering

(1) A and B only
(2) A and C only
(3) B and D only ✓
(4) C and D only

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5 Study the flow chart shown below carefully.

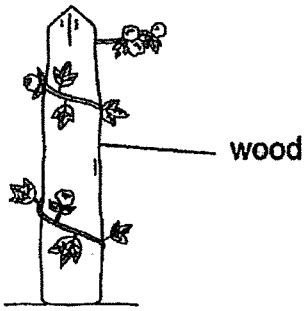


Which of the following shows the correct representations of A, B, C and D?

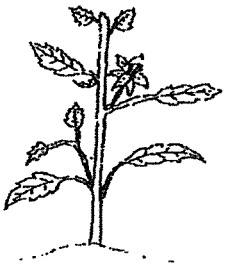
	A	B	C	D
(1)	snail	rat	cockroach	parrot
(2)	rat	parrot	snail	cockroach
(3)	cockroach	snail	rat	parrot
(4)	snail	cockroach	parrot	rat

(Go on to the next page)

6 Susan found 2 plants, R and S, in the garden as shown in the diagram below.



plant R



plant S

Which of the following describe the stems of plant R and S correctly?

	Plant R	Plant S
(1)	holds plant upright	takes in water
(2)	climbs up support	makes food for plant
(3)	makes food for plant	holds plant to the ground
(4)	climbs up support	holds plant upright

7 Which of the following statements are true about the human digestive system?

A Digestion is completed in the stomach.
B Digestive juice is not present in the mouth.
C Water is absorbed from the undigested food in the large intestine.
D Food undigested in the stomach may be digested in the small intestine.

(1) A and B only
(2) C and D only
(3) A, C and D only
(4) B, C and D only

8 The following observations were recorded by four pupils during an experiment on the growth of a bean plant.

Day	Length of Root (cm)	Length of Shoot (cm)	Number of Leaves
0	0	0	0
2	1	0	0
4	3	2	2
6	4	4	3

Each of the four pupils made the following comments.

Annie The plant can make its own food in Day 4.
Nuruli The shoot will not grow longer after Day 6.
Chooi The plant does not need food before Day 4.
Depal The root grows before the shoot to take in water.

Whose statements are correct?

(1) Annie and Depal
(2) Nuruli and Chooi
(3) Annie, Nuruli and Chooi
(4) Nuruli, Chooi and Depal

9 The insects below are in the adult stage.

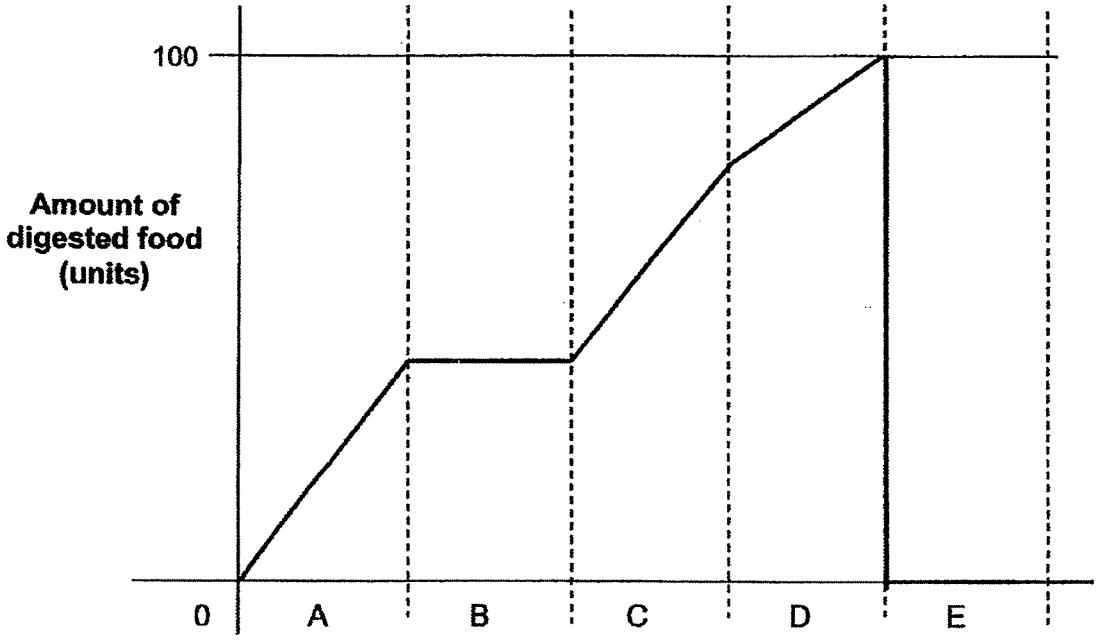


A B C D

Which of the following have young that <u>do not</u> look like their adults?

(1) A and B
(2) B and C
(3) C and D
(4) D and A

10 The graph below shows the amount of digested food in different parts of the digestive system.



Which part of the graph represents the gullet?

(1) A
(2) B
(3) D
(4) E

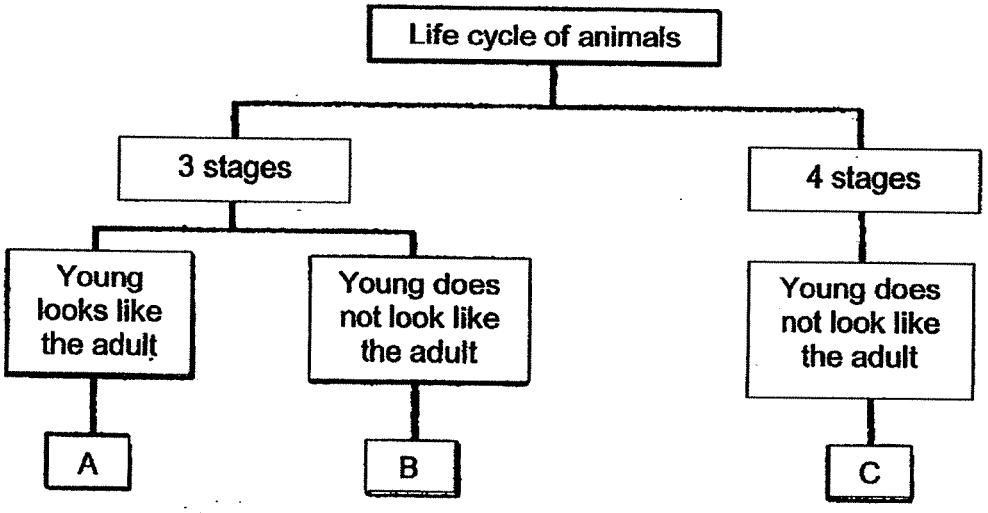
11 Abby carries out an experiment to find out whether red beans or green beans germinate faster. Which of the variables must she keep the same to ensure a fair experiment?

A Type of beans
B Amount of soil
C Amount of water
D Duration of the experiment

(1) A and C
(2) B and D
(3) B, C and D
(4) A, B, C and D

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12 Study the classification chart below.

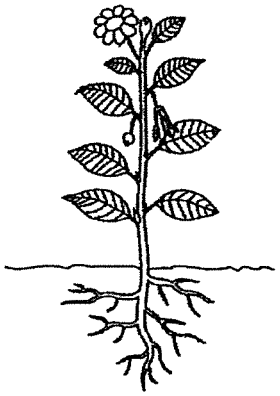


Which of the following represent organisms A, B and C?

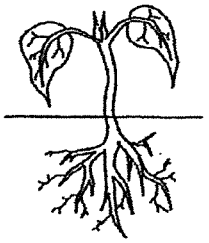
	A	B	C
(1)	frog	cockroach	mealworm beetle
(2)	mealworm beetle	cockroach	frog
(3)	cockroach	mealworm beetle	frog
(4)	cockroach	frog	mealworm beetle

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13 The pictures below show a plant at Stage S and Stage R of its life cycle. [Drawings are not drawn to scale]



Stage S

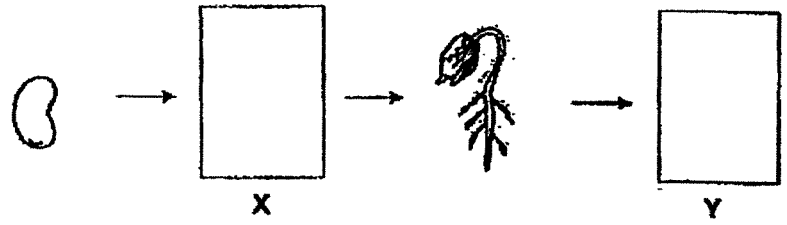


Stage R

Which one of the following is correct?

	Stage S	Stage R	Explanation
(1)	young	adult	The young stage has flower and fruit but the adult stage does not.
(2)	adult	young	The adult stage has flower and fruit but the young stage does not.
(3)	young	adult	The leaves in both adult and young stages can make food.
(4)	Adult	young	The leaves in adult stage can make food but not in young stage.

14 The diagram below shows the growth of a young plant with two missing stages, **X** and **Y**. (Diagrams are not drawn to scale)



Which of the following diagrams show the plant at stage **X** and **Y**?

	X	Y
(1)		
(2)		
(3)		
(4)		

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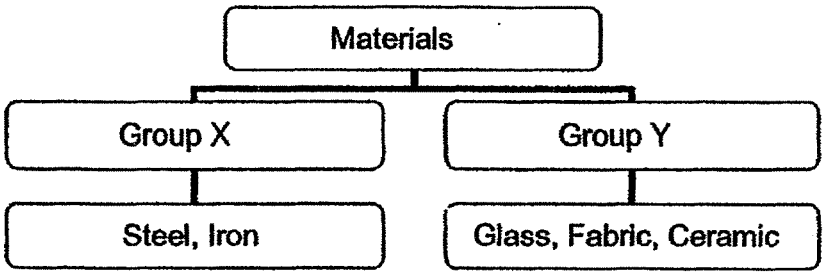
15 Four materials have certain properties that are shown in the table below.

Property	Material		
	P	Q	S
Floats on water	Yes	No	No
Comes from a living thing	Yes	No	No
Allows light to pass through	No	No	Yes

Which one of the following are likely to be P, Q and S?

	P	Q	S
(1)	wood	paper	glass
(2)	glass	iron	wood
(3)	wood	iron	glass
(4)	wood	glass	iron

16 Study the classification diagram below.

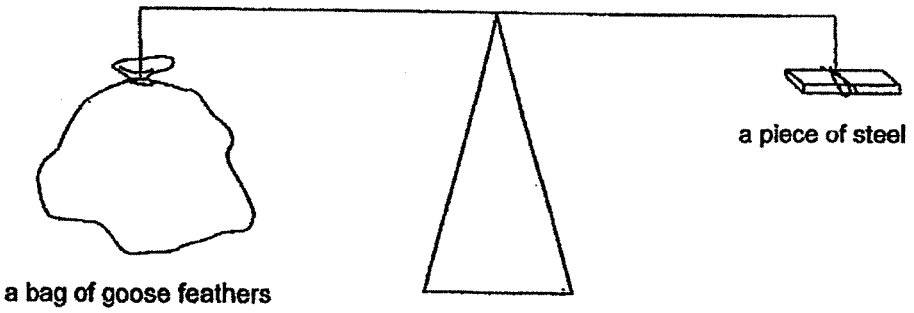


The above materials are classified according to their _____.

A strength
B flexibility
C magnetic property

(1) A only
(2) C only
(3) A and B only
(4) A, B and C

17 The diagram below shows a bag of goose feathers balanced by a piece of steel.



Which of the following statement(s) about the bag of goose feathers and the piece of steel is/are true?

A They have the same mass.
B They have the same volume.
C They are matter in the solid state.

(1) A only
(2) B only
(3) A and B only
(4) A and C only

18 Belinda tested the strength of four types of materials by hanging weights on each of the four materials until it broke. Her results are recorded in the table below.

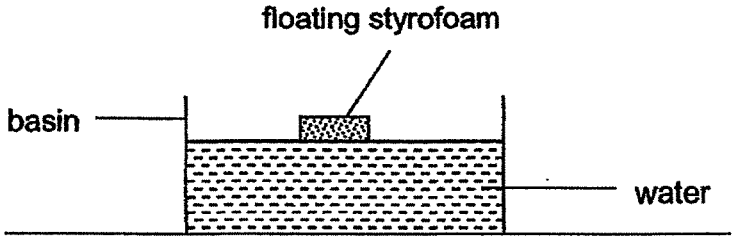
Material	Number of weights hung
P	28
Q	39
R	31
S	41

Which one of the following statements is correct?

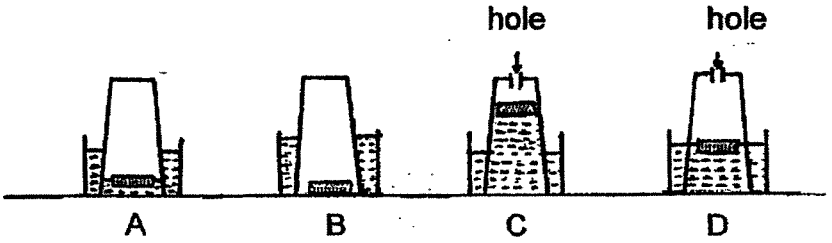
(1) Material S is stronger than Material R.
(2) Material R is stronger than Material S.
(3) Material Q is less flexible than Material S
(4) Material P is more flexible than Material Q.

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19 The diagram below shows a piece of styrofoam floating in a basin of water.



Plastic cups are inverted over the styrofoam and held down.

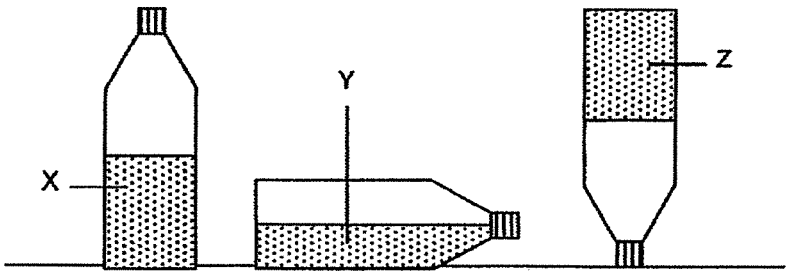


Which of the above diagrams show what could possibly happen to the piece of styrofoam and water?

(1) A and C only
(2) B and C only
(3) A and D only
(4) B and D only

(Go on to the next page)

20 The diagram below shows three substances X, Y and Z.



Based on the diagram above, which of the following statements are true?

A Substance Y is a liquid.

B Substance Z is a solid.

C Substances X and Z are gases.

D Substance Y has a definite volume.

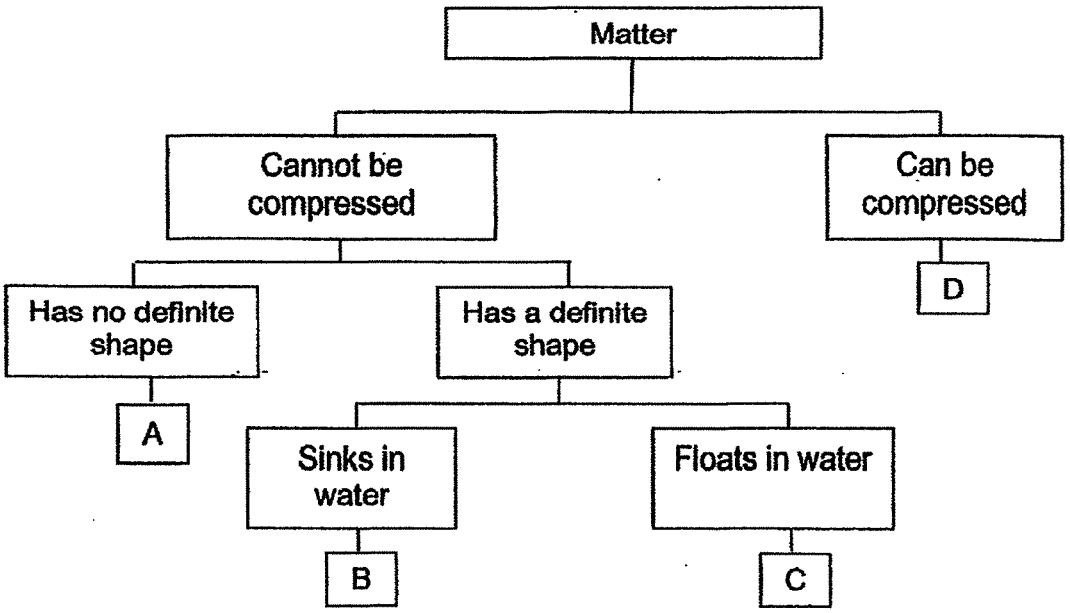
(1) A and C only

(2) B and D only

(3) A, B and C only

(4) B, C and D only

21 Study the classification chart as shown below.

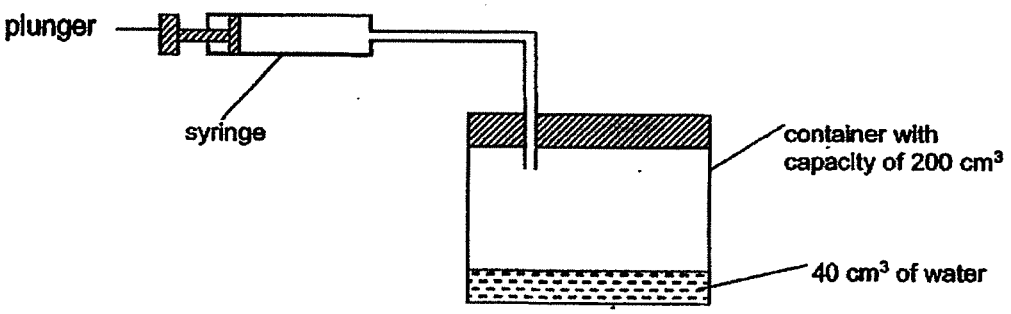


Which of the following represent A, B, C and D correctly?

	A	B	C	D
(1)	water	iron nail	plastic bag	oxygen
(2)	oxygen	plastic bag	iron nail	water
(3)	oxygen	iron nail	plastic bag	water
(4)	water	plastic bag	iron nail	oxygen

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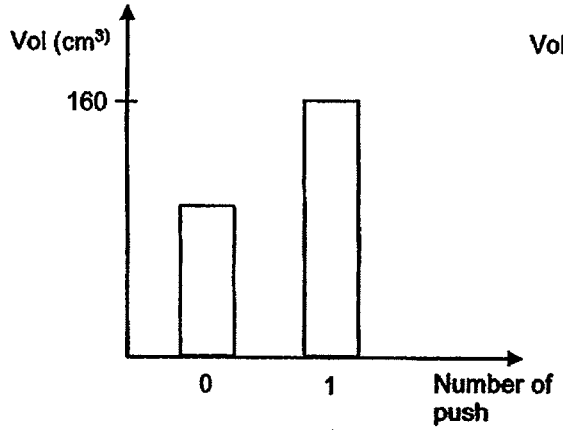
22 The diagram below shows a syringe fitted to a container with a capacity of 200 cm^3.



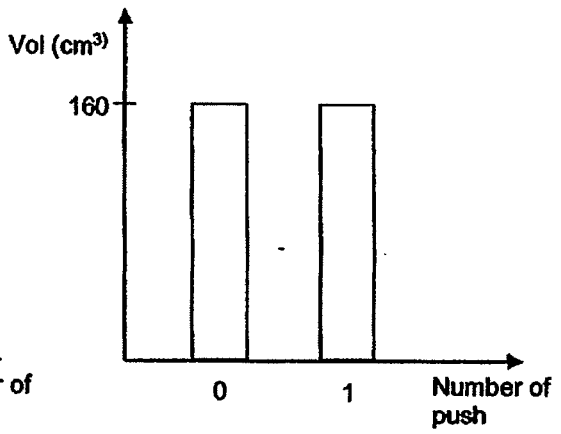
Each time the plunger was pushed fully, 100cm^3 of air will enter the container.

Which one of the following graphs correctly represents the volume of air inside the container when the plunger was pushed fully?

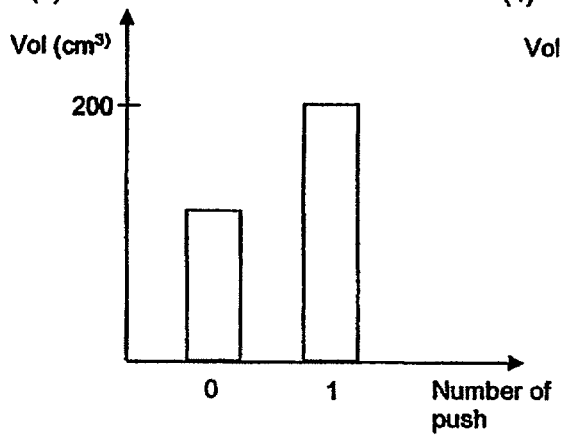
(1)



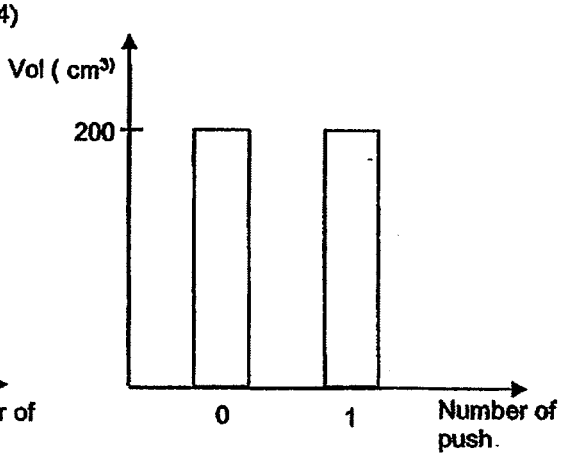
(2)



(3)

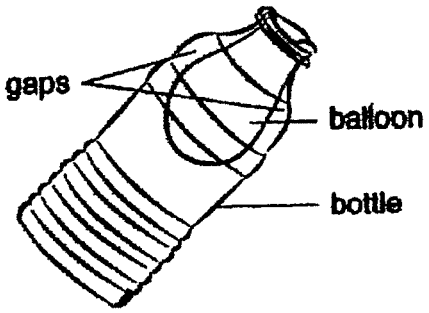


(4)



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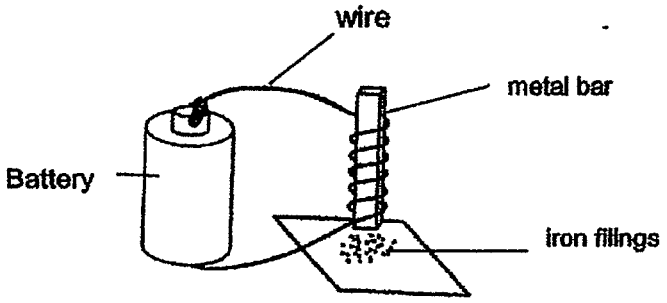
23 Tammy secures a deflated balloon over the mouth of a plastic bottle and then pumps air into the balloon. However, she realizes that it is almost impossible to blow the balloon up.



Why is it not possible for the balloon to inflate inside the bottle?

(1) The plastic bottle has a hole.
(2) The balloon is not flexible enough.
(3) The air inside the container occupies space.
(4) The air in the balloon cannot be compressed.

24 Ahmad wants to make an electromagnet. He sets up the experiment as shown below. There is no attraction when she places the metal bar near some iron filings.

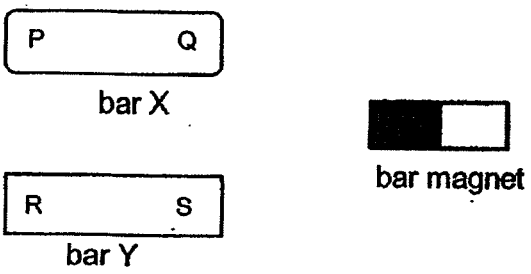


What is a possible reason why the iron filings are not attracted to the metal bar?

(1) The metal bar is made of aluminium.
(2) The iron filings have lost their magnetism.
(3) There is no switch to allow electricity to flow through.
(4) The electrical wire is coiled many times around the metal bar.

(Go on to the next page)

25 An experiment was carried out using a bar magnet and two metal bars, X and Y.



The magnet was brought close to each end of bar X and then bar Y.
The same procedure was carried out between the magnet and bar Y.

Which of the following would indicate that bar X is a magnet and not bar Y?

	Bar X		Bar Y	
	P	**Q**	**R**	**S**
(1)	repel	attract	repel	attract
(2)	repel	repel	attract	repel
(3)	attract	attract	repel	attract
(4)	attract	repel	attract	attract

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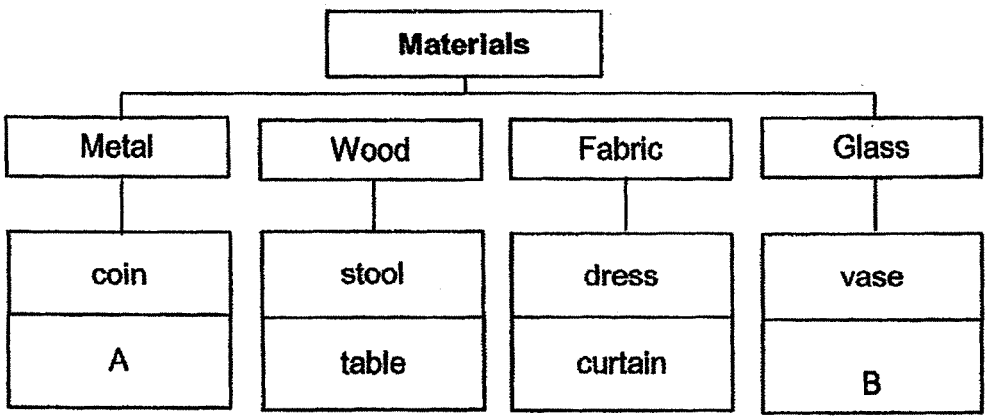
26 Sally had messed up the cards which showed the steps to finding the volume of a pebble.

A. Find the difference between the old and new volumes.
B. Fill the measuring cylinder with 20 ml of water.
C. Take the total volume of the water and the pebble.
D. Place the pebble into the water carefully.

Which arrangement below shows the correct order of steps to help Sally find the volume of the pebble?

(1) A, D, C, B
(2) B, D, C, A
(3) B, D, A, C
(4) D, B, C, A

27 Study the classification diagram below.

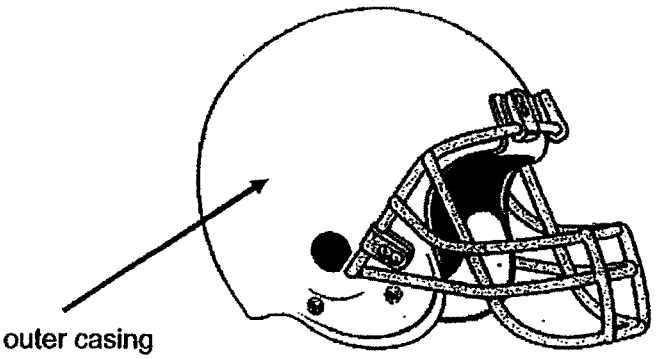


What are objects A and B most likely to be?

	A	B
(1)	screw	ribbon
(2)	safety pin	drink can
(3)	key	mirror
(4)	magnet	fish tank

(Go on to the next page)

28 The picture below shows the helmet of a football player.



The function of the helmet is to protect the player's head.

The material used to make the outer casing of the helmet should be _____.

(1) stiff and strong

(2) absorbent and stiff

(3) flexible and strong

(4) flexible and waterproof

END OF BOOKLET A

METHODIST GIRLS' SCHOOL

Founded in 1887

MID-YEAR EXAMINATION 2019
PRIMARY 4
SCIENCE

BOOKLET B

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.

Name: _____ _____ ( )

Class: Primary 4._____

Date : 14 May 2019

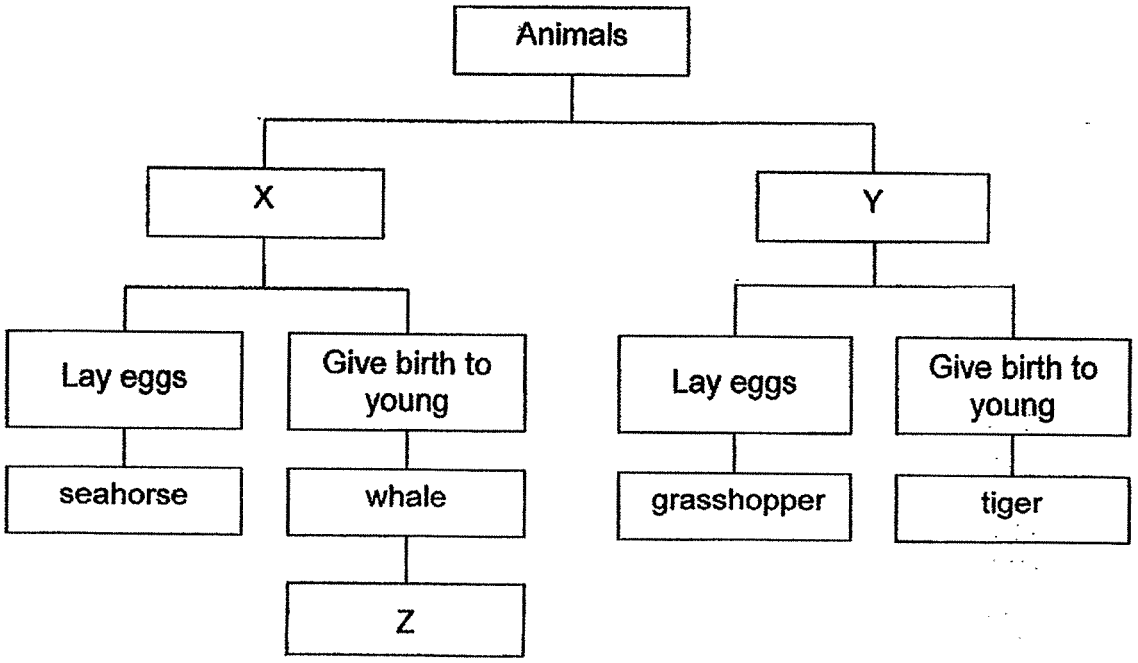
Booklet A	56
Booklet B	34
Total	90
Parent's Signature	

This booklet consists of 13 printed pages including this page.

For questions **29 to 40**, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.
[34 marks]

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29 Study the classification chart below.



(a) Based on the chart above, in what way is the seahorse and the grasshopper similar? [1]

_____

(b) Suggest suitable headings for X and Y based on where they live. [1]

X: _____

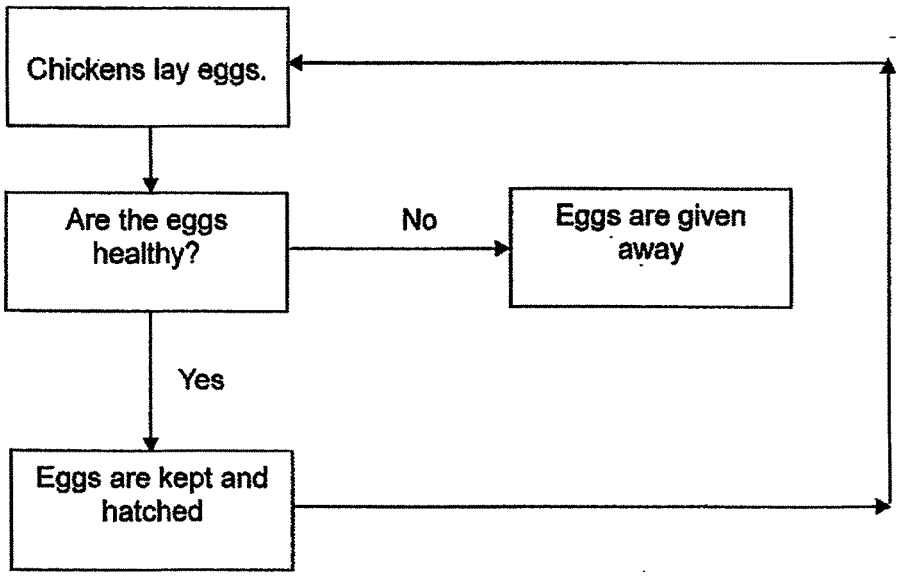
Y: _____

(c) Name an animal that can be placed in box Z. [1]

_____

3

30 The following flow chart shows how Farmer Tan rears his chickens.



(a) State one characteristic of living things that can be concluded from the above flow chart. [1]

_____

(b) Why does Farmer Tan keep the healthy eggs? [1]

_____

_____

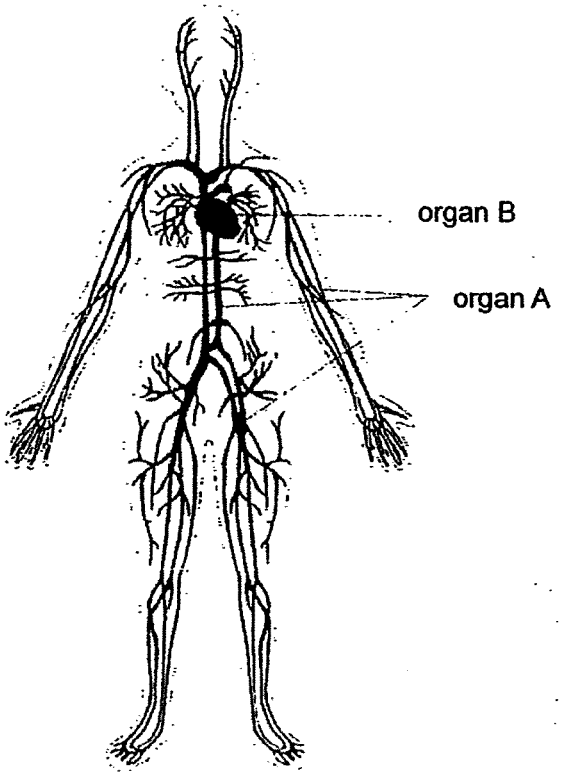
(c) State one similarity between the life cycle of the chicken and the frog. [1]

_____

_____

3

31 The diagram below shows a human body system with organs A and B.



(a) Identify organ A and organ B. [1]

Organ A: _____

Organ B: _____

(b) What is the function of the human body system shown above? [1]

_____

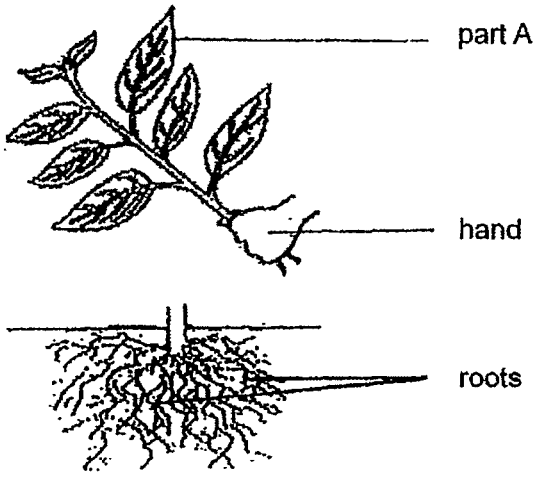
(c) Which two systems work together to allow a person to move? [1]

_____

3

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32 Samy tried to pull out a plant from the ground but was unable to do so. Then he used a knife to cut the plant as shown in the diagram below.



(a) What is the function of the roots that prevented Samy from pulling out the plant at first? [1]

_____

(b) The part of the plant that was cut off enables the plant to grow upright. What is another function of this plant part? [1]

_____

(c) Samy observed the part of the plant that was left in the ground died after two weeks. What is the reason? [1]

_____

_____

3

33 The diagram below shows the different stages in the life cycle of an organism. The adult stage is identified as Stage P.



Stage P: Adult



Stage Q



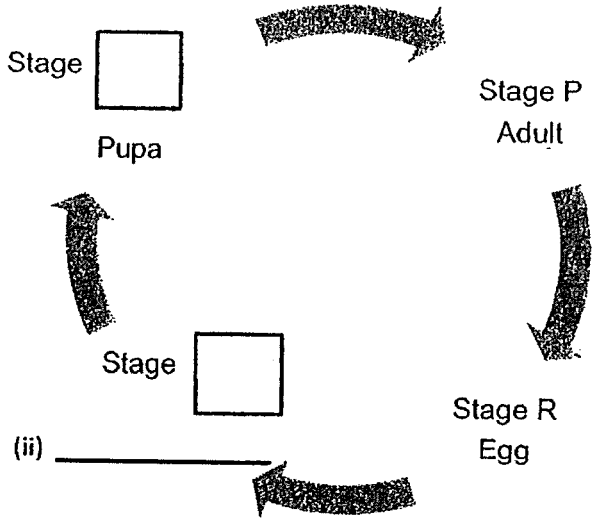
Stage R



Stage S

(a)i Complete the life cycle of the organism by filling in the correct boxes with letters Q and S. [1]

(a)ii Name the stage in the given blank.

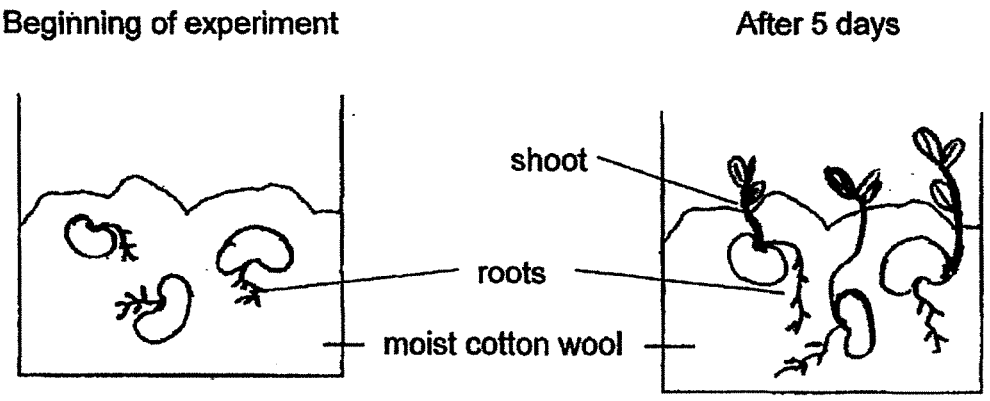


(b) What is a difference between the characteristics of the organism at stage **Q** and stage **S** of its life cycle? [1]

2

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34 Hamid wanted to find out how the bean plant grow. He set up the following experiment and placed the beaker on a table near the window.



(a) Why were the beans able to grow after 5 days? [1]

(b) Draw arrows in the boxes below to show the direction in which the roots and shoots grow at the end of the experiment? [1]

Roots: ☐

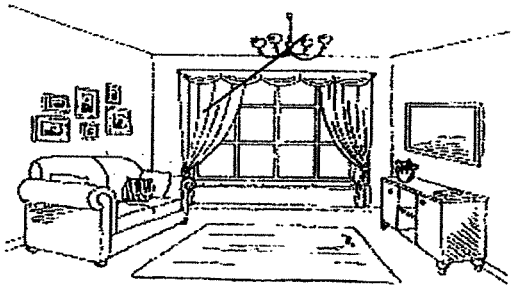
Shoots: ☐

(c) What could Hamid measure to show that the bean plant is growing? [1]

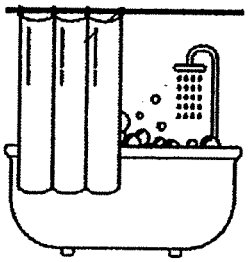
3

35 Rani bought two curtains for her living room and bathroom. The diagram below shows the two types of curtains.

Curtain made of Material X



Curtain made of Material Y



(a) Rani washed her curtains in the washing machine before using them. What is the similar property of the two materials that allows her to do so? [1]

Similarity: _____

_____

Rani used a cover to protect her car from the rain when she parked it at the open carpark.

(b) Based on the diagram above, which material, X or Y, is suitable to make the cover of the car? Give a reason for your choice. [1]

Material: _____

Reason: _____

_____

(c) Rani drew her curtains close before going away for a long holiday. What property of material X would prevent people from looking into her house? [1]

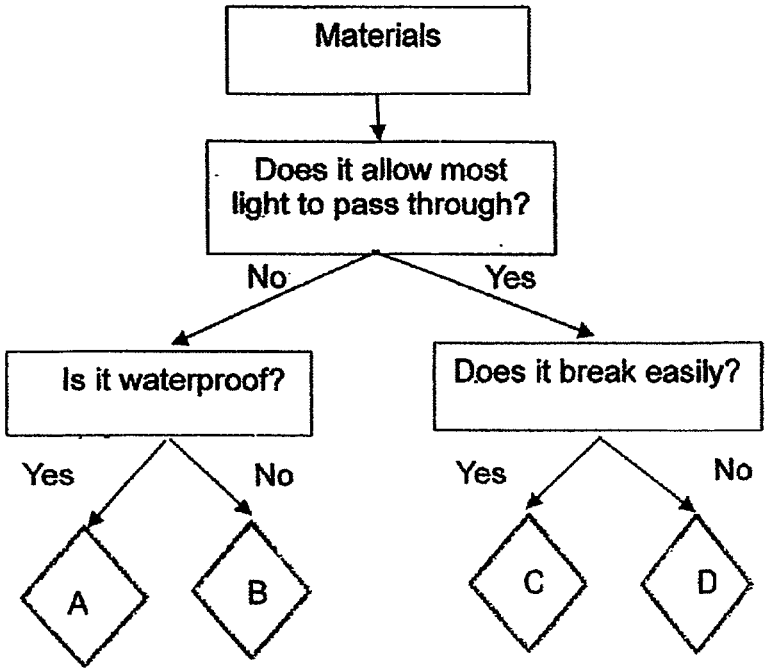
_____

_____

3

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36 The flow chart below shows the characteristics of four different materials, A, B, C and D.

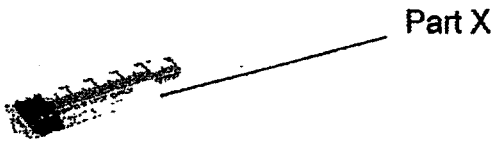


(a) Which of the objects below are represented by letters A, B, C or D? Write the letters in the box provided. [1]

Towel

Glass cup

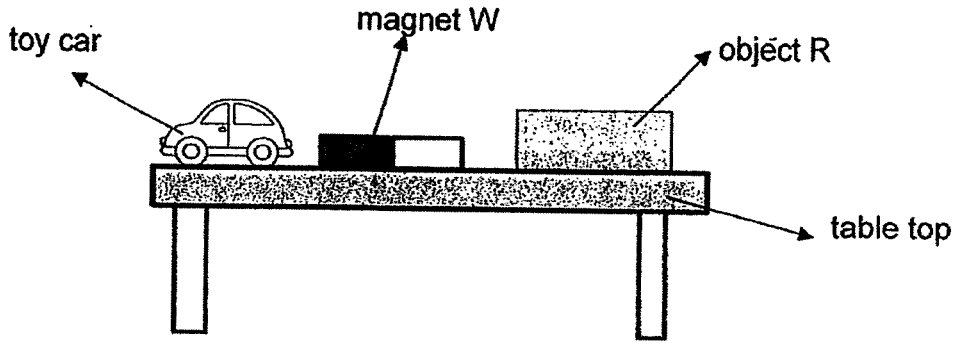
The picture below shows a syringe.



(b) Can part X be made using material A? Explain your answer. [1]

2

37 Minah placed a plastic toy car, magnet W and object R on a table top. When she placed object R near magnet W, the toy car was pushed off the table top by the magnet.

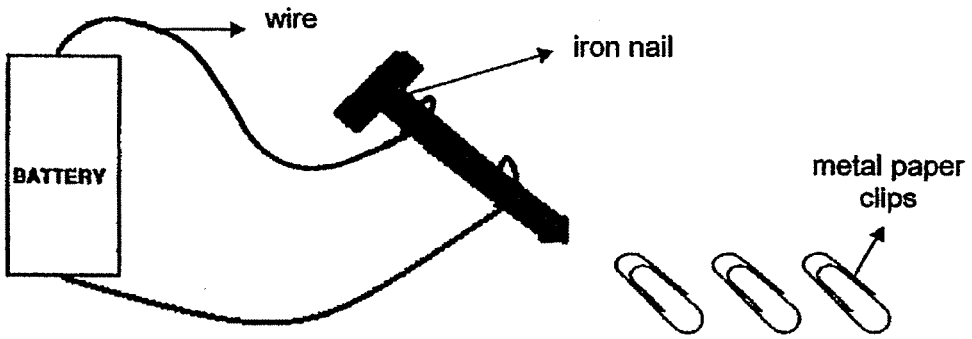


(a) What caused the plastic toy car to fall off the table top? [2]

(b) Without removing object R from the table, what should Minah do to object R so the toy car would not move at all? [1]

3

38 John set up the experiment as shown below and observed that the iron nail could not attract any paper clips at all even though the battery was new.



(a) Why was the iron nail unable to attract any paper clips? [1]

(b) State two changes to improve the set-up so that the iron nail would be able to attract the paper clips? [1]

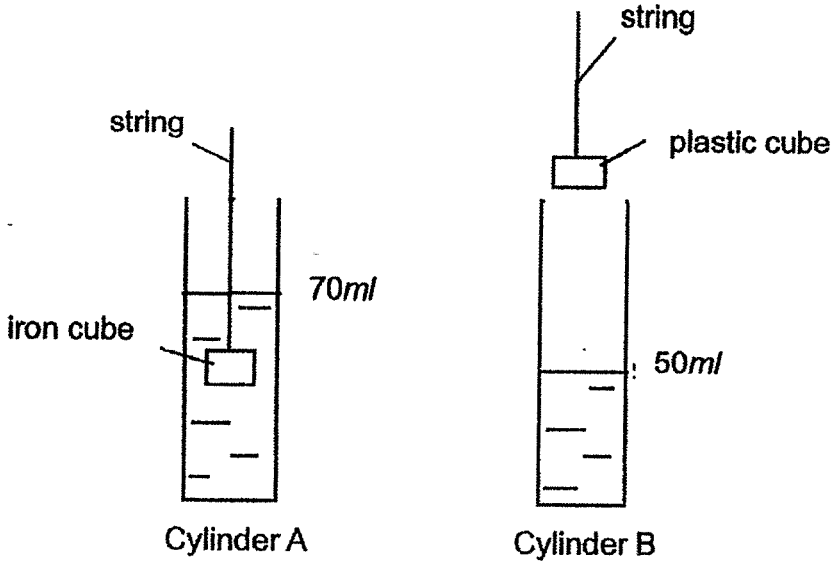
(i)

(ii)

(c) What would happen if John replaced the iron nail with a copper nail? Give a reason for your answer. [1]

3

39 Peter poured 50*ml* of water into each measuring cylinder. He lowered an iron cube into cylinder A until it reached the bottom of the cylinder. He repeated the steps with a plastic cube. Both the iron and the plastic cube have the same shape and size.



He recorded the water levels in the table below.

	Water level (ml)	
	Before the cube was put into the cylinder	After the cube was put into the cylinder
Cylinder A	50	70
Cylinder B	50	(_____)

(a) What would be the water level in Cylinder B after the cube was put inside? Fill in your answer in the table above. [1]

(b) Peter then lowered the iron cube until it touched the bottom of Cylinder A. Would the water level be higher, lower or remain the same? Explain your answer. [1]

_____

_____

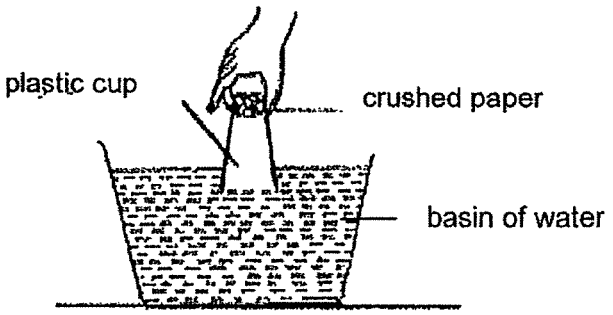
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(c) What property of matter could Peter conclude from this experiment? [1]

_____

_____

40 A piece of crushed paper was stuck to the bottom of an empty plastic cup. The cup was then inverted and pushed downwards into a basin of water as shown below. When the crushed paper was taken out of the cup, it was dry.



(a) Why was the crushed paper dry? Explain your answer. [1]

_____

_____

(b) Suggest one way that would cause the crushed paper to get wet. Explain your answer. [2]

_____

_____

6

END OF BOOKLET B

SCHOOL : MGS PRIMARY SCHOOL

LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : 2019 SA1

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	3	2	3	1	4	2	1	3	2

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	4	2	1	3	2	4	1	3	2

Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28
1	1	3	1	4	2	3	1

Methodist Girls' School (Primary)
P4 Mid-Year Examination 2019
Booklet B Answer Key

Qn.	Acceptable Answer
29a	Both lay eggs.
29b	X: Live in water OR X: Aquatic animals Y: Live on land Y: Land animals
29c	Dolphin / Seal / Walrus
30a	Living things reproduce / grow / need food.
30b	To ensure the healthy eggs are hatched and developed into adults to continue its life cycle.
30c	Both have an egg stage. / Both have 3 stages in their life cycles.
31a	Organ A: Blood vessels Organ B: Heart
31b	It carries blood to all parts of the body. / It carries digested food, water and oxygen in the blood to all parts of the body. / It carries waste materials away from different parts of the body.
31c	Skeletal and muscular systems
32a	Roots anchor/hold the plant firmly to the ground.
32b	The stem supports /spreads out the leaves to receive sunlight to make food. / The stem transports food and water, mineral salts to all parts of the plant.
32c	No food made in the leaves reaches the part of the plant left in the ground. / There is no food for the part of the plant left in the ground. / The part left in the ground cannot make food.
33a	Stage P (Adult) Stage R (Egg) Stage **Q** ii) (Larva) Stage **S** (Pupa)
33b	At Stage Q, organism moves around on its own but at Stage S, it does not move / is motionless. / At Stage Q, organism feeds a lot but at Stage S, it does not feed at all. / At Stage Q, organism moults but at Stage S, it does not moult.
34a	The beans grew because there was air, water and warmth.
34b	Roots: ↘ Shoots: ↑
34c	Height of the bean plant / number of leaves
35a	Similarity: Both material X and Y are flexible and can be folded.

35b	Material Y because it is waterproof and can keep the car dry.
35c	Material X does not allow light to pass through / is opaque.
36a	Towel – B Glass cup – C
36b	No, part X of the syringe needs to be transparent so that the user is able to see and measure/read the volume of liquid accurately but material A is not transparent so it cannot be used.
37a	Object R is a magnet and like poles of magnet W and Object R are facing each other so they repel each other, causing the plastic toy car to fall off the table top. / Object R was also a magnet. It repelled Magnet W which moved towards the plastic toy car and pushed it off the table.
37b	Turn Object R around so that the unlike poles of object R and Magnet X will face and attract each other.
38a	There is not enough coils of wire around the nail.
38b	(i) Increase the number of batteries and (ii) Increase the number of coils of wire around the nail.
38c	The copper nail will not become an electromagnet because it is a non-magnetic material.
39a	70
39b	It will remain the same because the iron cube has a definite volume.
39c	Matter occupies space/ takes up space/ have volume.
40a	The air inside the cup occupied some space and the water could not reach the crushed paper. Therefore, the crushed paper remained dry.
40b	Poke a hole or tilt the cup so that air is able to escape and water can enter to take its place.